

IN THE CLAIMS

1-12. (canceled)

13. (currently amended) A method of manufacturing a pipe or a tubular element comprising the steps of:

drawing of the pipe;

machining operations, including cutting in the unfolded condition and shaping of the individual pipes; and

the carrying out of an internal surface treatment so as to obtain an increase in the hardness and/or mechanical strength of the pipe, with regard to both radial/tangential stresses and axial stresses, wherein said surface treatment comprises a nitriding or carbonitriding treatment in which the pressure of a controlled nitrogen or carbon and nitrogen atmosphere is cycled such that it increases and decreases in a pulsed manner, such that said pressure is cyclically increased for a certain period of time and then allowed to drop to a lower level for a further period of time.

14. (canceled)

15. (previously amended) A method according to claim 13, wherein the external surface of the pipe is subjected to a nitriding or carbonitriding treatment.

16. (canceled)

17. (original) A method according to claim 13, wherein the nitriding or carbonitriding treatment is also extended to at least part of the internal and/or external surfaces of the front ends of the pipe by means of screening of the parts not to be treated.

18. (canceled)

19. (original) A method according to claim 13, wherein in combination with at least one preceding and/or with at least one subsequent step, an additional step consisting of subjecting the pipe to a prestressing process.

20. (canceled)

21. (original) A method according to claim 13, comprising one or more steps for internally and/or externally lining the pipe prior to or after surface treatment thereof and/or one or more steps for separate or simultaneous surface treatment of the internal and/or external lining layer(s) of the pipe.

22. (original) A method according to claim 13, comprising a surface oxidation step intended to provide an attractive aesthetic appearance and high corrosion resistance.

23-29. (canceled)

30. (currently amended) A method of manufacturing a pipe having a wall of a pre-determined thickness with an internal surface and an external surface, said method including the step of

nitriding and/or carbonitriding treatment of the internal surface so as to obtain an increase in the hardness and/or mechanical strength of the pipe, with regard to both radial and tangential stresses and axial stresses,

wherein said nitriding or carbonitriding treatment includes cycles in which the pressure of a controlled nitrogen or carbon and nitrogen atmosphere increases and decreases in a pulsed manner, such that said pressure is cyclically increased for a certain period of time and then allowed to drop to a lower level for a further period of time.

31. (previously presented) A method of manufacturing a pipe according to claim 30, said method including providing a pipe made from metal, steel or alloyed steel produced by nitriding.

32. (previously presented) A method of manufacturing a pipe according to claim 30, including the step of providing a pipe, wherein the dimension of the thickness of the wall is much greater than the dimension of the bore.
33. (previously presented) A method of manufacturing a pipe according to claim 30, including the step of providing a pipe, wherein the internal diameter of the pipe is in the region between one and three millimeters.
34. (previously presented) A method of manufacturing a pipe according to claim 30, including the step of nitriding or carbonitriding the external surface of the pipe.
35. (previously presented) A method of manufacturing a pipe according to claim 30 wherein said method further comprises an autofrettage treatment of said pipe.
36. (previously presented) A method of manufacturing a pipe according to claim 30, including the step of providing a pipe, wherein at least one front end of said pipe is shaped for sealed connection, and said nitriding or carbonitriding treatment is extended to at least part of the internal surface and/or the external surface of the front ends of the pipe.
37. (previously presented) A method of manufacturing a pipe according to claim 30, including the step of providing a pipe, wherein said pipe has one or more external and/or internal lining layers which are subjected either at least together or separately to a single-face or dual face strengthening treatment by means of nitriding and/or carbonitriding.
38. (previously presented) A method of manufacturing a pipe according to claim 30, the step further comprising providing a pipe made from multiple layers comprising different materials.
39. (previously presented) A method of manufacturing a pipe according to claim 31, the step further comprising a pipe made from multiple layers comprising different materials.